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ABSTRACT

Data on enrollment on the economic impact of independent colleges in Massachusetts are presented for 1979-1980 and 1980-1981. Enrollment in the 80 Massachusetts independent colleges and universities represented about 55 percent of the total state higher education enrollment in both 1980 and 1981. These 80 schools contributed $3.6 billion to state personal income and 177,000 nonagricultural jobs in 1981 through both direct and indirect effects. In addition, an employment-based Massachusetts econometric model developed by Data Resources, Inc., also estimated a 10,000 worker (1980-1981) decline in total employment in the state in the absence of independent higher education, as compared with a 10,000 worker rise with the schools. The Massachusetts independent schools paid $1.1 billion to 85,000 employees and spent $1.1 billion on goods and services in 1981. An additional $97 million was spent on capital expenditures. The existence of these 80 schools also meant a saving of $242 million in taxes for the citizens of Massachusetts. Approximately 44,000 students in 1981 would have sought places in the public college and university system if the independent schools had not been available, and most of the remaining 185,000 students in the independent schools would have attended college in another state. (Author/SW)

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The Economic Impact of Independent Colleges and Universities on Massachusetts in 1979-80 and 1980-81

by Lawrence Olson

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SYNOPSIS:
THE ECONOMIC IMPACT OF
INDEPENDENT COLLEGES AND UNIVERSITIES
ON MASSACHUSETTS IN 1979-80 AND 1980-81

by Lawrence Olson

This report updates a 1980 DRI study on the economic impact of independent institutions of higher learning on the Commonwealth of Massachusetts. DRI's employment-based Massachusetts Econometric Model was simulated with and without the schools and their students to assess their impact on the state economy. The simulations were used to determine both direct and indirect (multiplier) effects.

The study found that the eighty independent colleges and universities contributed $3.6 billion to Massachusetts personal income and 177,000 nonagricultural jobs in 1981 through both direct and indirect effects. The model also estimated a 10,000 worker (1980-1981) decline in total employment in the state in the absence of independent higher education, as compared with a 10,000 worker rise with the schools.

The Massachusetts independent schools paid $1.1 billion to 85,000 employees and spent $1.1 billion on goods and services in 1981. An additional $97 million was spent on capital expenditures. The existence of these eighty schools also meant a saving of $242 million in taxes for the citizens of Massachusetts. Approximately 44,000 students in 1981 would have sought places in the public college and university system if the independent schools had not been available, and most of the remaining 185,000 students in the independent schools would have attended college in another state.

Introduction

A 1980 DRI study provided extensive data on the finances and enrollments of independent institutions in the Commonwealth, on their students' finances, and on the economic impact of these institutions and their students on the Commonwealth. The earlier study covered 1977, 1978, and 1979.* The purpose of this study is to update the results to 1980 and 1981.

The 80 Massachusetts independent colleges and universities enrolled about 229,000 students in the school year ending June 1981, with a majority of those students coming from outside the Commonwealth. The schools had 85,000 employees with total salaries of $1.1 billion. Counting direct and indirect effects, the schools contributed about $3.6 billion to Massachusetts personal income (5.7% of the total) and raised total employment by about 177,000 (6.7% of the total). These contributions represent substantial increases from the $2.3 billion added personal income and 132,000 in increased employment reported for 1979 in the earlier study.

The Independent Colleges and Their Students in 1980 and 1981**

Enrollment in independent colleges and universities represented about 55% of total Massachusetts higher education enrollment in both 1980 and 1981. About 95% of independent enrollment is in AICUM member schools.

Independent institutions continued to be major employers. In 1980, their 77,000 employees received approximately $971 million in wages and salaries, rising to 85,000 employees and total wages of $1.1 billion in 1981. The schools spent an additional $915 million in 1980, $1.1 billion in 1981, on goods and services, providing jobs for thousands of suppliers and service personnel.

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*"The Economic Impact of Independent Higher Education on Massachusetts," by Lawrence Olson and Zofia Mucha, March 1980. School years are denoted by the year in which they end. Thus, 1977 refers to the 1976-1977 school year.

**The material in this section draws on Tables 2 and 3 in the appendix. The appendix also describes the update procedures used to translate 1979 data to 1980 and 1981.

Despite strong competition for research money, Massachusetts independent schools attracted significantly increased research funds during 1980 and 1981, totalling $752 million in the former year, $869 million in the latter. The vast majority of this research support originated outside the Commonwealth.

Capital expenditures also continued at a high rate -- $151 million in 1980 and a further $97 million in 1981. Substantial capital expenditures are planned for the current school year and for the following two years, totalling more than $300 million over the 3-year period.

The importance of deferred maintenance expenditures appears to have increased since the earlier report. The total amount of maintenance that has had to be deferred because of lack of money is estimated at $72 million as of June 1981. This amount is double the level reported two years earlier, implying that the schools are experiencing increasing difficulty in financing their maintenance needs.

A majority of the students in independent colleges and universities come from outside the Commonwealth, bringing in substantial outside money from parents and savings. When these sums are added to financial aid, most of which originates outside the Commonwealth, and to expenditures by the students' visitors, it is clear that the students make large financial contributions to the Massachusetts economy.

Economic Impact on the Commonwealth

As in the earlier study, we estimated economic impact by solving DRI's employment-based Massachusetts Econometric Model both with the schools and their students included in Massachusetts totals, and omitting the schools and those students who indicated they would be residing elsewhere if there were no independent colleges in Massachusetts. The difference between the two econometric simulations is the estimated economic impact of independent higher education on the Commonwealth. This impact includes the direct effect of outside money brought into Massachusetts by independent higher education and an indirect "multiplier" effect that occurs because some of the money remains in the Commonwealth for successive rounds of spending.

Calculated in this way, independent higher education is estimated to have increased Massachusetts total personal income by about $3.0 billion in 1980 (5.2% of the total) and by $3.6 billion (5.7%) in 1981 (see Figure 1).

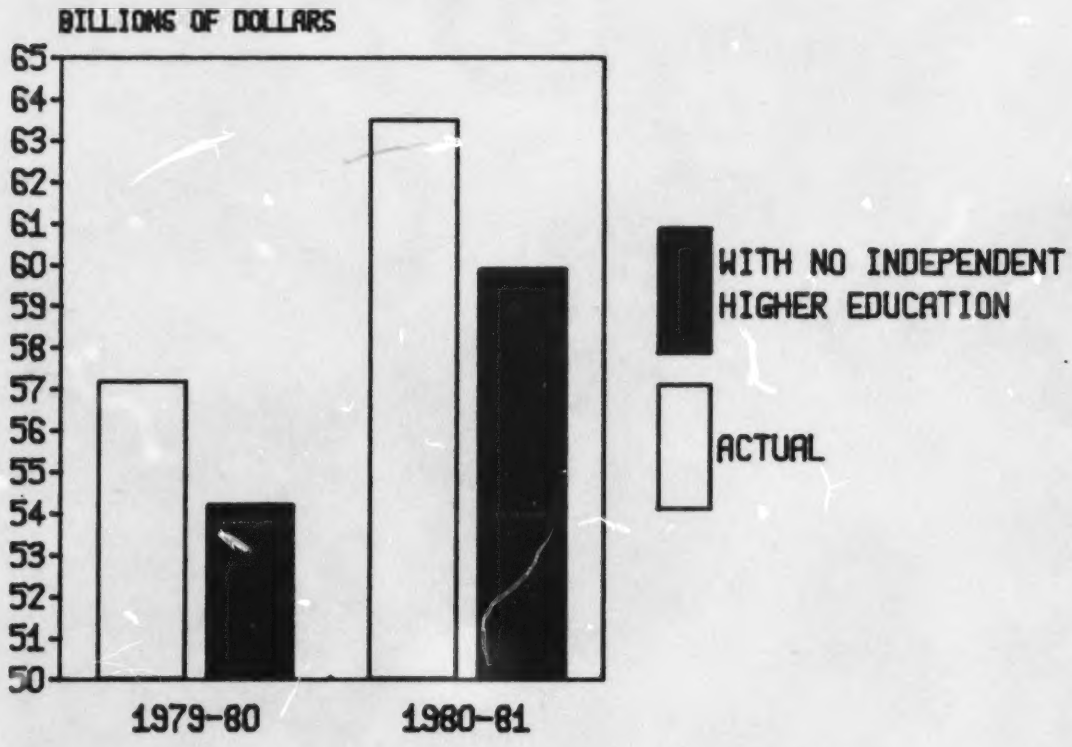
Overall nonagricultural employment received an even larger boost from independent higher education -- 159,000 more jobs (6.0%) in 1980 and 177,000 (6.7%) in 1981 (see Figure 2). Comparing the latter figure with the school's 85,000 employees in 1981, this says that independent higher education supports slightly more than twice as many workers (counting direct and indirect effects) as it employs.

These impacts are higher than those presented in the earlier report and they increase from 1980 to 1981, indicating that the estimated economic importance of independent colleges and universities continues to rise. The increasing impact is particularly important for employment, which grew by about 10,000 (from 2,650,000 in 1980 to 2,660,000 in 1981). Our results show that in the absence of the independent schools and their students, employment would have fallen by about 10,000 workers (from 2,490,000 to 2,480,000). Thus, the colleges were the difference between growth and decline.

Another important benefit from the presence of independent colleges and universities is lower taxes. Based on student questionnaire responses, about three-quarters of independent college students would not be living in the Commonwealth if the independent institutions were not here. Still, using the standard approximation that three part-time students equal one full-time-equivalent student, about 41,000 more full-time-equivalent students would have sought places in the Massachusetts state system in 1980, 44,000 in 1981, in the absence of independent higher education. Boston University estimates that the 1975 average taxpayer cost of educating a full-time equivalent student in the state sector was $3,252, an amount that rises to $4,979 in 1980 and $5,499 in 1981 when escalated by the all-urban Consumer Price Index. Thus, under the (admittedly crude) assumption that new students would have cost the same as existing students, tax savings were about $204 million in 1980, $242 million in 1981.

FIGURE 1

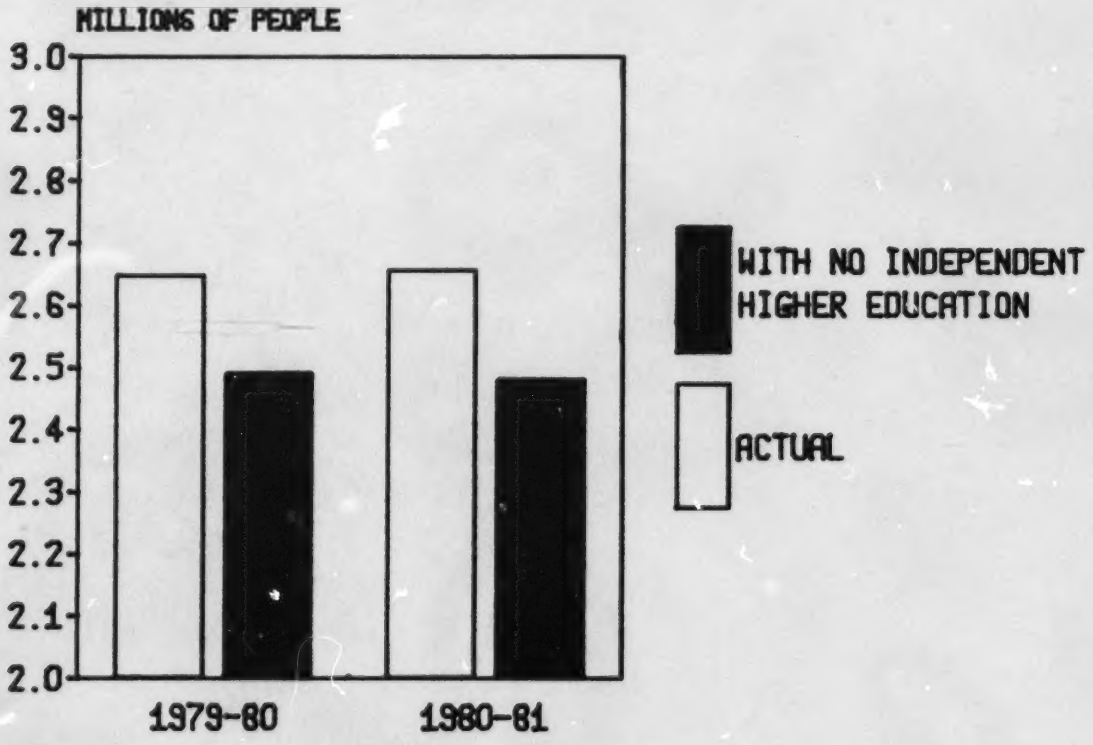
PERSONAL INCOME IN MASSACHUSETTS
SCHOOL YEARS 1979-80 & 1980-81



WHITE BARS REPRESENT CURRENT VALUES, SHADED BARS SHOW AN ESTIMATE OF WHAT THESE VALUES WOULD HAVE BEEN IF THERE HAD BEEN NO INDEPENDENT COLLEGES OR UNIVERSITIES IN THE COMMONWEALTH

FIGURE 2

NON-AGRICULTURAL EMPLOYMENT IN MASSACHUSETTS
SCHOOL YEARS 1979-80 & 1980-81



WHITE BARS REPRESENT CURRENT VALUES, SHADED BARS SHOW AN ESTIMATE OF WHAT THESE VALUES WOULD HAVE BEEN IF THERE HAD BEEN NO INDEPENDENT COLLEGES OR UNIVERSITIES IN THE COMMONWEALTH

These large sums compare with the small amounts that the state currently pays in scholarship assistance to students attending the independent institutions. In fiscal 1981, this assistance consisted of $4 million in matching scholarship funds and $10 million in general scholarship funds. In other words, the taxpayer pays $14 million to support the education of 229,000 independent students. If there were no independent sector, three-quarters of these students would seek education in another state, but the cost to taxpayers of educating those who remained would be more than 15 times as large as current state support of independent institutions.

Conclusions

The contributions of independent higher education to the Commonwealth go far beyond those detailed in this report. For example, Massachusetts' success in weathering the current recession has been due mainly to the increasing concentration of its industry in highly technological, education-intensive industries. Still the effects detailed here are impressive.

The 80 independent schools employ 85,000 people and pay $1.1 billion in wages and salaries. They spend an additional $1.1 billion for goods and services. The 229,000 students that attend these schools annually spend about $370 million in addition to tuition, room, and board. Visitors to these students spend more than $140 million yearly.

Counting direct and multiplier effects, the schools and their students contributed about $3.6 billion to Massachusetts personal income and 177,000 jobs to Massachusetts nonagricultural employment in 1981. Furthermore, our results show that the 10,000 worker increase in employment between 1980 and 1981 would have been replaced by a decline of 10,000 in the absence of independent higher education.

The schools also save taxes by educating students at little cost to the taxpayer. Public education would have cost Massachusetts taxpayers about $242 million more in fiscal 1981 in the absence of the independent schools, while saving only $14 million in state subsidies to the independent sector.

APPENDIX

The update procedure is quite simple. Basically, the information from a resurvey of 10 institutions, augmented with information from new AICUM members, was used to update the institutional data in Table 2. The students were not resurveyed. Instead, all dollar figures in Table 3 were adjusted to reflect cost-of-living increases as represented by the Consumer Price Index.

In order to update the institutional information from the earlier study, we resurveyed 10 of the AICUM schools -- Boston College, College of the Holy Cross, Dean Junior College, Harvard University, Merrimack College, Northeastern University, Smith College, Springfield College, Stonehill College, and Worcester Polytechnic Institute. These schools were chosen to be representative of AICUM institutions. They enroll about 40% of all AICUM students.

Institutional questionnaires were also sent to the schools that have joined AICUM since the previous survey -- Berklee College of Music, Hellenic College, Laboure' Junior College, New England College of Optometry, and Simon's Rock of Bard College. Answers were received from all but one of these institutions. The new members have a combined enrollment of about 4,000, or approximately 2% of total independent enrollment.

The update procedure for institutional information relied on an assumption (also employed in the earlier study) that institution-level data are representative on a per-student basis. Therefore, we converted each of the items in Table 2 into levels per student across the resurveyed schools in 1979, 1980, and 1981. We applied the change in these per-student ratios to the ratios for the entire original sample to get updated ratios for that group. We then calculated similar ratios for the new AICUM members and used these to generate ratios for all AICUM schools included in either sample. Finally, we employed these ratios to estimate grand totals for all of AICUM and all independent schools in Massachusetts (assuming that the included schools were representative of all schools on a per-student basis).

An example may facilitate understanding of this procedure. The 10 resurveyed schools averaged about 45.8 employees for each 100 students in 1981, up from about 40.5 in 1979. Thus, employees per student increased by 13.1% between two years. We applied this growth rate to the original survey data, raising employees per student from about 32.9 to about 37.2 per 100 students. The originally surveyed schools had an enrollment of 211,096 in 1981, while the new members answering the survey had 1,413 students and about 29.0 employees per 100 students. Thus, the number of employees per 100 students for the entire current sample is about 37.1 = [(37.2)(211096) + (29.0)(1413)] /(212509). The precise number is 37.124. Therefore, we estimate 80801 = (37.124)(217651)/100 employees for all AICUM schools and 84914 = (37.124)(228731)/100 for all Massachusetts independent colleges and universities.

The parts of Table 2 for which this procedure was deemed inappropriate concern deferred maintenance and projections of future capital expenditures. In both cases, rather than updating the figures presented in the earlier report, we multiplied the per-student amounts for schools that were surveyed in 1981 (the resurveyed schools plus those new AICUM members that provided information) by the total independent enrollment to get totals for all independent schools. The estimates of these items are thus a bit volatile, since they are based on a relatively small sample.

It was decided not to resurvey the students, in an effort to keep costs manageable and based on an assumption that their behavior is unlikely to have changed very much in two years. Therefore, Table 3 duplicates the corresponding table in the earlier report, except that each dollar figure has been increased by the change in the Consumer Price Index between school year 1979 and school year 1981, i.e., each dollar figure in Table 3 is 26.4% higher than the similar figure in the earlier report.

TABLE 1

MASSACHUSETTS INDEPENDENT COLLEGES AND UNIVERSITIES

AICUM Members

American International College
Amherst College
Anna Maria College
Assumption College
Atlantic Union College
Babson College
Bay Path Junior College
Becker Junior College
Bentley College
Berklee College of Music
Boston College
Boston Conservatory of Music
Boston University
Bradford College
Brandeis University
Central New England College
Clark University
College of Our Lady of the Elms
College of the Holy Cross
Curry College
Dean Junior College
Eastern Nazarene College
Emerson College
Emmanuel College
Endicott College
Fisher Junior College
Gordon College
Hampshire College
Harvard University
Hebrew College
Hellenic College
Laboure' Junior College
Lasell Junior College
Lesley College
Massachusetts College of Pharmacy and Allied Health Sciences
Massachusetts Institute of Technology
Merrimack College
Mount Holyoke College
Mount Ida Junior College
New England College of Optometry
New England Conservatory of Music
Nichols College
Northeastern University
Pine Manor College
Radcliffe College
Regis College
Simmons College
Simon's Rock of Bard College
Smith College
Springfield College
Stonehill College
Suffolk University
Tufts University
Wellesley College
Wentworth Institute of Technology
Western New England College
Wheaton College
Wheelock College
Williams College
Worcester Polytechnic Institute

Other Institutions

Andover Newton Theological School
Aquinas Junior College
Arthur D. Little Management Education Institute
Bay State Junior College of Business
Berkshire Christian College
Chamberlayne Junior College
Episcopal Divinity School
Forsyth School of Dental Hygienists
Franklin Institute of Boston
Gordon-Conwell Theological Seminary
New England Institute of Applied Arts and Sciences
New England School of Law
Newbury Junior College
Pope John XXIII National Seminary
Saint Hyacinth College and Seminary
Saint John's Seminary
School of the Museum of Fine Arts
School of the Worcester Art Museum
Swain School of Design
Worcester Junior College

TABLE 2
INSTITUTIONAL DATA FOR AICUM SCHOOLS AND FOR ALL INDEPENDENT INSTITUTIONS UPDATED TO THE 1980 AND 1981 SCHOOL YEARS

	All AICUM Members		All Independent Colleges	
	1980	1981	1980	1981
Enrollment (thousands)				
Full-time	149.4	151.8	156.3	159.2
Part-time	58.9	65.9	62.8	69.5
Total	208.3	217.7	219.1	228.7
Employees (thousands)	73.1	80.8	76.9	84.9
Total Wages and Salaries Paid (millions of dollars)	923.1	1089.2	970.7	1144.6
Research Funding (millions of dollars)	715.4	826.6	752.2	868.7
Goods & Services Expenditures (millions of dollars)	870.5	1045.3	915.3	1098.5
Capital Expenditures (millions of dollars)	143.9	91.9	151.3	96.6
Estimated Future Capital Expends. (millions of dollars)				
1982		130.8		137.5
1983		87.6		92.1
1984		100.4		105.5
Deferred Maintenance as of June 1981 (millions of dollars)		68.4		71.9

Source: Derived from a 1979 survey of all AICUM institutions updated with a resurvey of 10 institutions and new surveys of the AICUM members that have joined since 1979.

TABLE 3

DATA ON INDEPENDENT COLLEGE STUDENTS UPDATED TO SCHOOL YEAR 1980-81

Lived on Campus	Yes 69%, No 31%		
If Not, Lived with Parents	Yes 58%, No 42%		
Graduate of MA Secondary School	Yes 44%, No 56%		
Money Spent in MA Other than for Tuition, R&B	$1598		
Financial Aid	% Receiving	Avg. Amt.	Avg. with Zeros
Scholarships and Grants	44%	$2422	$1059
Loans	43%	$2173	$ 935
Work-Study	26%	$ 868	$ 225
Total			$2219
Money from Jobs Other than Work-Study	51%	$1644	$ 839
Out-of-State Visitors (47% age 25 or more)	65%	20 Visitor Days	13 Visitor Days

Students' estimate of what they would be doing now if there were no independent colleges or universities in Massachusetts.

23% in state-supported college in MA
12% in state-supported college in another state
62% in independent college in another state
3% not in college

Source: Derived from 2542 questionnaires received from students in AICUM institutions in 1979. Percentages are taken directly from the 1979 questionnaires. Dollar values are updated by the change in the all-urban Consumer Price Index.

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